1   What is claimed is:

2

3   1.   An apparatus for controlling a door of a drum type washing machine,

4   comprising:

5   a water level sensor sensing a water level of water held in a washing tub;

6   a door lock locking/unlocking the door;

7   a control unit judging whether to open or close the door according to the water level

8   in the washing tub and controlling the door lock according to the judgment; and

9   a display unit displaying whether to open or close the door to a user.

10

11   2.   The apparatus as claimed in claim 1, wherein the control unit compares the

12   water level in the washing tub to a reference to judge whether to open the door.

13

14   3.   The apparatus as claimed in claim 2, wherein if the water level in the

15   washing tub is higher than the reference, the control unit judges that it is impossible to open

16   the door and wherein if the water level in the washing tub is lower than the reference, the

17   control unit judges that the door can be opened.

18

19   4.   The apparatus as claimed in claim 1, further comprising:

20   a door open button of inputting a command of the user intending to open the door;

21   and

22   an alarming unit making an alarm sound if the control unit judges not to open the

23   door when the command is inputted.

24

5.   The apparatus as claimed in claim 1, wherein the display unit further displays a lock/unlock status of the door.

6.   A method of controlling a door of a drum type washing machine, comprising the steps of:

sensing a water level in a washing tub;

comparing the sensed water level to a reference; and

locking or unlocking the door according to a result of the comparing step.

7.   The method as claimed in claim 6, wherein the door is locked if the sensed water level is higher than the reference and wherein the door is unlocked if the sensed water level is lower than the reference.

8.   The method as claimed in claim 6, further comprising the step of displaying a lock/unlock status of the door.

9.   The method as claimed in claim 6, further comprising the step of checking whether power is applied to the washing machine.

10.   The method as claimed in claim 9, wherein if the power is not applied, the door is locked and wherein if the power is applied, it is checked whether the washing tub is rotating.

11.   The method as claimed in claim 10, wherein if the washing tub is rotating,

49 the door is locked and wherein if the washing tub is not rotating, the water level in the

50 washing tub is sensed.

51

52   12.   The method as claimed in claim 9, wherein if the power is not applied, the

53 door is locked and wherein if the power is applied, the water level in the washing tub is

54 sensed.

55

56   13.   An apparatus for controlling a door of a drum type washing machine,

57 comprising:

58   a motor sensor sensing a motor for driving a washing tub;

59   a water level sensor sensing a water level of water held in the washing tub;

60   a door lock locking/unlocking the door;

61   a control unit controlling the door lock to lock/unlock the door according to the water

62 level in the washing tub in case that a user's command for opening the door is inputted to the

63 washing machine; and

64   a display unit displaying a lock/unlock status of the door.

65

66   14.   The apparatus as claimed in claim 13, wherein the control unit compares the

67 water level in the washing tub to a reference to determine whether to open the door.

68

69   15.   The apparatus as claimed in claim 14, wherein if the water level in the

70 washing tub is higher than the reference, the control unit locks the door and wherein if the

71 water level in the washing tub is lower than the reference, the control unit unlocks the door.

72

73   16.   A method of controlling a door of a drum type washing machine, comprising

74 the steps of:

75   receiving a user's command for opening the door;

76   checking whether a power is applied to the washing machine;

77   unlocking the door if the power is not applied or checking whether water exists in a

78 washing tub if the power is applied;

79   unlocking the door if the water fails to exist in the washing tub or sensing a water

80 level in the washing tub if the water exists in the washing tub; and

81   locking or unlocking the door according to the sensed water level.

82

83   17.   The method as claimed in claim 16, wherein the sensed water level is

84 compared to a reference to determine whether to lock or unlock the door.

85

86   18.   The method as claimed in claim 17, wherein the door is locked if the sensed

87 water level is higher than the reference and wherein the door is unlocked if the sensed water

88 level is lower than the reference.

89

90   19.   The method as claimed in claim 16, further comprising the step of displaying

91 a lock/unlock status of the door.

92

93   20.   The method as claimed in claim 16, further comprising the step of checking

94 checked whether the washing tub is rotating if the power is applied.

95

96   21.   The method as claimed in claim 19, wherein if the washing tub is rotating,

97   the door is locked and wherein if the washing tub is not rotating, the water level in the

98   washing tub is sensed.

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